

Application No. 09/711,567
Attorney's Docket No. 031221-058

REMARKS

Claims 84-92 are pending in the application. Claims 84, 85 and 90 were amended to specify normal ambient conditions without an exterior energy source. Support for this amendment may be found at least on page 19, lines 14-15. Claim 84 was amended to set forth the components of the manufactured article. The amendments to the claims are believed to place the claims in condition for allowance and Applicants respectfully request that the amendments be considered after final. No new matter was added.

Claims 84, 85 and 87-89 were rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Suzuki et al., U.S. Patent No. 5,137,785. Applicants respectfully traverse this rejection.

Claim 84 is directed to a manufactured article comprising a first and second substrate and an adhesive therebetween produced by a method for bonding a first substrate surface to a second substrate surface. The method comprises providing a catalyst at the first substrate surface, providing a metathesizable material between the first substrate surface and the second substrate surface or providing a metathesizable material as a component of the second substrate; and contacting the catalyst on the first substrate surface with the metathesizable material under normal ambient conditions without an exterior energy source, so that the metathesizable material undergoes a metathesis reaction and bonds the first substrate surface to the second substrate surface.

Claim 85 is directed to a manufactured article that includes a first substrate surface, a second substrate surface and an adhesive layer interposed therebetween, wherein the first substrate surface comprises an elastomeric material and the adhesive layer comprises a metathesis polymer which was polymerized upon contact with a catalyst under normal ambient conditions without an exterior energy source. Claims 87-89 depend directly or indirectly on claim 85.

Suzuki et al. describes a composite material composed of two parts, a substrate and a surface layer wherein the substrate is a ring-opened polymer of a norbornene-type monomer having tricyclic or higher cyclic structure and the surface

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layer is a polymer sheet of an olefin polymer or a thermoplastic hydrocarbon elastomer. The polymer sheet tenaciously adheres to the substrate without any extraneous adhesive or means to a degree that tearing takes place in the substrate when an attempt is made to separate the polymer sheet from the substrate. *Column 2, lines 9-18.*

According to the Office Action, it is the examiner's position that in the laminated article in Suzuki et al., it is the metathesis polymer intermediate layer that can be said to be an adhesive as it is bonding the adjacent surface layers in the final composite laminate. This interpretation is not supported by the disclosure of Suzuki et al. First, Suzuki et al. clearly teaches that no adhesive is present (Col. 2, line 15-16). Suzuki is directed to a substrate and a surface layer polymerized around the substrate (Col. 2, line 10). The surface layer is provided as an overmolding ("polymer sheet") of a norbornene-type monomer on the substrate (Col. 2, line 22) that has been inserted into a reaction injection mold (RIM mold). There are clearly not two substrates joined to each other by an intervening adhesive as is presently claimed. Second, Suzuki et al. states that the composite material has a polymer layer formed on the surface of a substrate and the substrate is a ring-opened polymer of a norbornene-type monomer. (Col. 2, lines 47-48) Thus, the substrate is a metathesis polymer and the overmolded layer is a olefin polymer and/or a thermoplastic hydrocarbon elastomer. Finally, Suzuki et al. describes the process by which the polymerization process used in Suzuki et al. prevents sink marks from forming on the surface of the molded article, stating:

...if the surface layer-forming material is arranged in the mold, the layer-forming material adheres closely to the surface of the substrate with curing and shrinkage of the polymeric material by ring-opening polymerization, and hence, formation of a sink mark by shrinkage is prevented.

Column 6, line 65 - column 7, line 2. This description indicates close adherence without formation of an adhesive.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *MPEP § 2131.* As discussed, Suzuki et al. does not contain each and every feature

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of the invention as defined in the rejected claims. An adhesive is missing between the substrate and the overmolded polymer in Suzuki et al.

As noted, claim 84 is directed to a manufactured article comprising a first and second substrate and an adhesive therebetween produced by a method. The method entails providing a catalyst on a first substrate surface and contacting it with a metathesizable material to bond the first substrate surface to the second substrate surface. This method results in an adhesive material between the first and second substrate surfaces. Claim 85 is directed to a manufactured article that has an adhesive layer interposed between a first substrate surface and a second substrate surface. Thus, these claims are directed to articles with features not found in Suzuki et al.

Since Suzuki et al. does not disclose each and every feature of the claims, it does not anticipate the invention as defined by the rejected claims. In addition, Suzuki et al. does not make the invention as defined by the rejected claims obvious since one of skill in the art would not consider the teachings of Suzuki et al. in forming a manufactured article of two substrates and an adhesive since Suzuki et al. specifically states that no adhesive is used or needed in the invention described therein. In view thereof, Applicants respectfully request that this rejection be withdrawn.

Claims 84-92 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mühlebach et al., U.S. Patent No. 5,973,085, taken with Ofstead, U.S. Patent No. 3,935,179 and Suzuki et al. Applicants respectfully traverse this rejection.

Claims 84 and 85 are independent claims directed to a manufactured article. Claims 86-89 depend directly or indirectly from claim 85. Claim 90 is an independent claim directed to a tire laminate. Claims 91 and 92 depend directly or indirectly from claim 90.

Mühlebach relates to compounds having at least two strained cycloolefins bonded directly or via a bridging group, compositions comprising these compounds and a one-component catalyst for thermally induced and/or radiation-induced

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metathesis polymerization. *Column 1, lines 5-8.* Mühlebach does not describe or suggest any catalysts which may be used at normal ambient conditions without an exterior energy source or which will polymerize upon contact. Rather, this patent teaches away from compounds and catalysts which react on contact under normal ambient conditions without an exterior energy source. *See, for example, column 16, lines 6-12 and column 50, lines 42-50.*

The cited patents do not describe or suggest the features of the manufactured articles or tire laminate defined in the amended claims. Mühlebach describes catalysts for thermally induced and/or radiation-induced metathesis polymerization. Ofstead describes polymerization in solution or in bulk, which results in a different product from the manufactured article claimed. Suzuki et al. does not describe any article which includes adhesive. In view of the lack of teachings in these patents of the features of the invention as defined in the amended claims, Applicants respectfully request that the rejection of claims 84-92 be withdrawn.

Claim 84 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Suzuki et al. or Mühlebach et al. taken with Ofstead and Suzuki et al., and further in view of Lesser, U.S. Patent No. 2,978,354. Applicants respectfully traverse this rejection.

Claim 84 is directed to a manufactured article wherein the metathesis reaction takes place under normal ambient conditions without an exterior energy source. Suzuki et al. et al. does not describe a manufactured article as claimed as discussed above. Mühlebach does not describe metathesis reactions under normal ambient conditions without an exterior energy source. To the contrary, Mühlebach describes compositions of catalyst and monomer premixed which are storage-stable in the dark. *Column 49, lines 45-46.* These compositions do not react until either heat or radiation is applied. Ofstead describes bulk or solution polymerization, resulting in a product different from the manufactured product claimed, as described in the present specification. *Page 7, lines 13-15.*

None of the these patents describe or suggest the manufactured product of claim 84. Moreover, the combination of Lesser with these patents does not provide

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any teaching or suggestion that obviates the lack of teachings in the primary patents cited.

Further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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Attachment to Amendment

Marked Up Copy of Claims

84. (Three Times Amended) A manufactured article comprising a first and second substrate and an adhesive therebetween produced by a method for bonding a first substrate surface to a second substrate surface comprising

- (a) providing a catalyst at the first substrate surface;
- (b) providing a metathesizable material between the first substrate surface and the second substrate surface or providing a metathesizable material as a component of the second substrate; and
- (c) contacting the catalyst on the first substrate surface with the metathesizable material under normal ambient conditions without an exterior energy source so that the metathesizable material undergoes a metathesis reaction and bonds the first substrate surface to the second substrate surface.

85. (Twice Amended) A manufactured article that includes a first substrate surface, a second substrate surface and an adhesive layer interposed therebetween, wherein the first substrate surface comprises an elastomeric material and the adhesive layer comprises a metathesis polymer which was polymerized upon contact with a catalyst under normal ambient conditions without an exterior energy source.

90. (Twice Amended) A tire laminate comprising a tire carcass having an outer periphery surface, a tire tread having a bonding surface, and a metathesis polymer adhesive layer between the outer periphery surface of the tire carcass and the bonding surface of the tire tread, wherein the metathesis polymer adhesive layer was formed by polymerization upon contact with a catalyst under normal ambient conditions without an exterior energy source.